

GROUNDBREAKING CEREMONIES for Sandia's new Technology Transfer Center are scheduled Saturday, May 14, at 11 a.m. with President George Dacey officiating. The New Mexico congressional delegation is expected to attend. All Sandians and their families are invited. Site preparation for the new building is under construction directly south of Bldg. 822.

Construction Starting on Technology Transfer Center

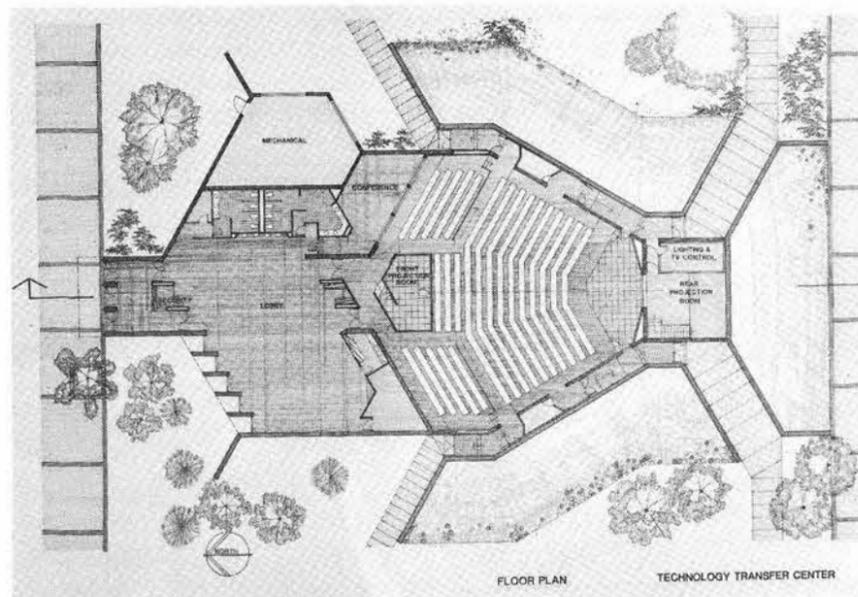
Site preparation started this week for Sandia's new \$1.9 million Technology Transfer Center located directly south of Bldg. 822. The Center, containing approximately 14,000 square feet, will seat 495 in the main conference presentations area. The new Center will complement Bldg. 815 much as a Ferrari complements a Ford. Estimated completion date is July 1984.

A paved parking lot with 140 new spaces will be located east of the present Bldg. 823 parking area. Exterior landscaping is also planned.

The double-walled corridors (shown in the accompanying floor plan drawing) provide fire exits, easy access for display equipment, and noise control — particularly exterior noises.

Education and Training Division I 3521 will be responsible for use and scheduling of the Technology Transfer Center.

Plant Engineering project leader is Bruce Phillips (3643). Design team members include Jerry Hands, Mark Ralph (both 3643), and Bob Sharp (3651).



LAB NEWS

VOL. 35 NO. 9 SANDIA NATIONAL LABORATORIES APRIL 29, 1983

Secrets of Sol-Gel Glass Sought

Jelly-like masses are unlikely precursors of a form of glass, but a mixture of water, alcohol, and metal oxides can produce a synthetic glass with properties that make it attractive in cases where a glass-like film or layer must be applied at temperatures below the melting point of "real" glass (1000°C or more).

The synthetic glass is not new — it's been around for a couple of decades — but advancement in the technology has been mostly trial-and-error. Recently, however, Jeff Brinker (1846) has led an investigation into the chemical and physical processes that produce these "sol-gel" glasses.

"Our research aim is to establish an appreciation of sol-gel chemistry and microstructure by employing the expertise of polymer physicists and chemists, ceramists, and geochemists," says Jeff. "We want to identify all of the significant process variables and the roles they play in achieving a certain product. This hasn't been attempted before on a systematic basis."

Sol-gel glass formation begins by adding



water to an alcohol solution of metallic compounds containing, for example, silicon, boron, or titanium. With water added, the solution's (sol's) physical structure begins to change, even at room temperature, to that of a plastic (gel). It is applied to a surface by dipping, spraying, or another thin-film coating technique; then it dries to form a hard, clear, brittle material containing millions of tiny pores. As a final step, dried gel is heated to 450° to 1000°C (depending on composition of the sol and other variables) where it changes into a dense, homogeneous, chemically inert glass.

SOL-GEL GLASS in its liquid form is being coated on a copper tube, part of an experiment being conducted by Jeff Brinker and Carol Ashley (both 1846) for Los Alamos National Scientific Lab. Jeff is holding a silica-gel sample, a precursor to fused silica.

Analyses have already shown that the type of polymer growth — chain or cluster — can be controlled by varying the acidity of the sol and the amount of water added. The team has also established that the gel's skeleton may be unlike the structure of dense glass formed during conventional melting procedures. This knowledge is a key to developing the capability to reliably and repeatedly tailor physical and mechanical properties of the sol-gel glass. Conventional glass melting offers no opportunity

(Continued on Page Two)

Antojitos

The Joy of Tax--Now that we've had at least two weeks to recover from the annual ordeal of preparing income tax forms (called returns, apparently because each year they return), it's a good time to consider how the ordeal could be changed to offer at least a modicum of pleasure amid the pain.

Simply make available to taxpayers a coded list of all the major federal programs supported by income taxes. Then, add a line to the 1040 and allow you, the taxpayer, to fill in the code number of the program (or, by percentage, the programs) you are most willing to support.

No, there would be no guarantee that your tax would actually go toward the program(s) you prefer. None. Not even implied.

So why bother? First, in spite of the foregoing, you'd have some chance of kidding yourself into believing that your financial profferings go where your preferences lie. Second, and much more important, when reduced, analyzed, quantified, and otherwise manipulated, the data from all the millions of taxpayers would give the folks in Washington a more-or-less accurate picture of which programs Americans feel are worth supporting. As such, the report that emerged would be an annual barometer of the pressures for and against programs from the people who pay for them.

No, I don't recommend that the person who pays \$20,000 in taxes gets a "vote" 20 times as heavy as the one who pays \$1000. I'm not advocating that the rich (or those whose tax shelters leak) should have more say because they're rich. It's the traditional American way--one taxpayer: one token gesture. ●BH

There are two things certain -- death and taxes. Unfortunately, they occur in reverse order.

Continued from Page One

Sol-Gel Glass

for this type of control over molecular structures.

Sol-gel thin films are already being developed to reduce metallic oxidation, to prevent gas penetration, and to serve as inter-level of dielectrics in semiconductor devices. They are also used on solar cells and in parabolic trough solar collectors. In this application, the sol-gel works two ways to improve the performance of the collectors. It helps protect the chromium sesquioxide (or "black chrome") selective absorber from oxidation, and it can be used to make an anti-reflective glass envelope surrounding the tube. Thus, solar energy that might otherwise be bounced back into space is allowed to pass through the glass and strike the black chrome-coated tube.

Use of sol-gel films to protect laser optics (windows and lenses, for example) from laser light damage is in an earlier stage of research. Highly reactive porous gels are also in development to permit low temperature synthesis of unconventional glasses that are extremely strong, corrosion resistant, and stable at high temperatures. Porous sol-gel glasses can also be used as catalysts or selective filters.

Finally, concentrated sol-gel solutions can be used to cast bulk pieces of glass that are difficult or impossible to make using traditional techniques. This expensive procedure is currently worthwhile only for very special applications and requirements; for example, when traditional techniques require melting temperatures greater than 1700°C.

Researchers from these departments aided in the sol-gel studies: Solid State Research 1150, Organic and Electronic Materials 1810, Materials Characterization 1820, Chemistry and Ceramics 1840, and Process Development Laboratories 7470.

Retiree Picnic Set May 26

About 2500 invitations to Sandia retirees go into the mail next week announcing the Annual Retiree Picnic. The event is scheduled Thursday, May 26, in the Coronado Club patio from 4 to 6 p.m.

Supervisory Appointments

PAUL ROSENKOETTER to supervisor of Administrative Support for Computing Division 2611, effective April 16.

Joining the Labs in 1976, Paul worked with the Personnel Systems division as a systems analyst. He later transferred to the Computer Operations department as a section supervisor in charge of production control. His most recent assignment has been as a financial analyst with the Comptroller's organization.

Paul received his BS in math and experimental psychology from the University of California at San Diego and his MBA from UCLA. He enjoys skiing, sailing, and gar-

dening. He and his wife Gayle live in NW Albuquerque.

* * *

BRIEN BOPP to supervisor of Project Design Definition Division IV 2455, effective April 16.

Brien joined the Labs in 1966 as a draftsman and has remained with his original department since then.

He received an associate degree in drafting and design technology from Penn State and a BS in ME from UNM, where he is currently doing graduate work in ME. Brien and his wife Mary Ellen have two children and live in the NE heights.

 LAB NEWS

Published Fortnightly on Fridays

SANDIA NATIONAL LABORATORIES

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In Livermore 415/422-2447 FTS 532-2447

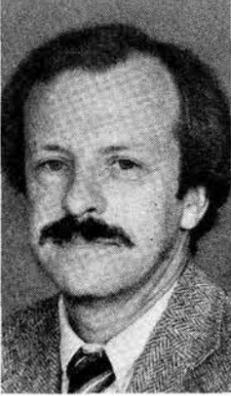
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BRIEN BOPP (2455) and PAUL ROSENKOETTER (2611)

Supervisory Appointment



ED CULL to supervisor of Engineering Division II 8445, effective April 16.

Ed joined Sandia Livermore in 1968 as a technical staff member first working on the W62 Mark 12 re-entry vehicle program, then on the W71 Spartan missile. Ed's next assignment was thermal analysis work and then the Non-violent Explosive Destruct System (NEDS) program. He has also worked on the solar central receiver program at Barstow and, most recently, the W87 MX Warhead program.

Ed holds Bachelor and Master's degrees in mechanical engineering from the University of Santa Clara.

Residents of Belmont, Ed and his wife Diane have two teenage children. His leisure activities include home remodeling and participation in The Claypipers at Drytown, Ca., a little theater group.

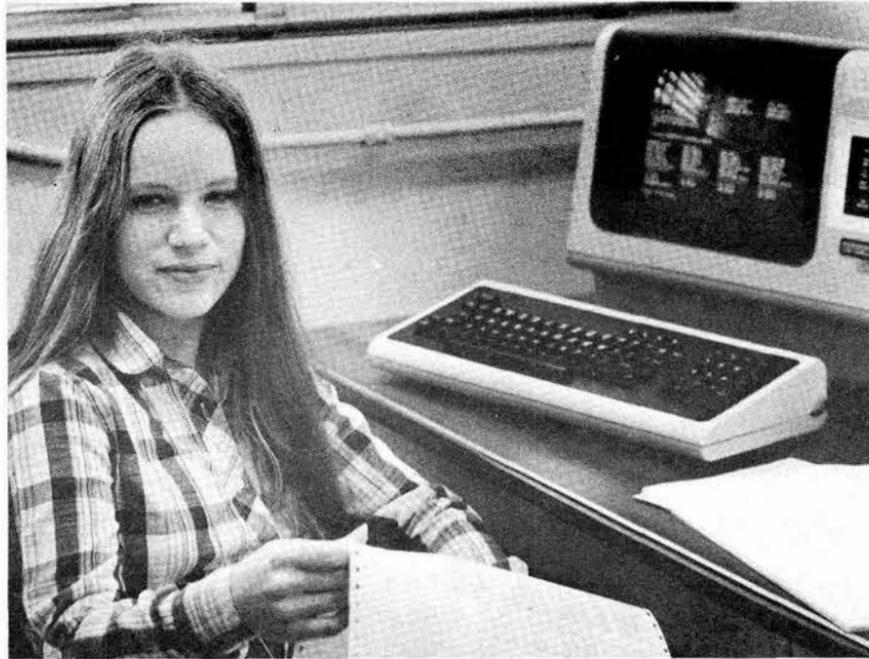


SANDIA LIVERMORE NEWS

VOL. 35 NO. 9

SANDIA NATIONAL LABORATORIES

APRIL 29, 1983



DASSL is the acronym for "Differential-Algebraic Solver, Sandia Labs" — a mathematical computer code developed by Linda Petzold (8331). The code solves a common type of linear algebraic equations heretofore unsolvable by standard computer codes.

New Computer Code

DASSL Solves Differential-Algebraic Equations



Possible incorrectness in a foreign tongue reminds me of one of my own most embarrassing faux pas (pronounced, of course, "foe pahz" in the plural). "If you can't think of the Spanish word, try the French," my travelwise *amigos* told me before my trip to Latin America. Often they were right, but not always. The French word for "head," *tête*, brought forth perplexed laughter from a Guadalajara fish merchant when I asked to buy *pescados con tetas*. I had not requested (as I'd hoped) pompano with their heads left on (I should have said *cabezas*). Rather, I unwittingly asked for "fish with breasts" — and not used a very polite word for "breasts," either. (English would have been a better guide in this case.)

— Ronald R. Butters in
The New York Times Magazine

Computer modelling problems are often formulated as systems of differential equations. Most computer codes for solving differential equations, including those available in the Sandia math library, are designed for solving systems that must be written in the standard form $y'+f(t,y)$. However, often it is not convenient or possible to write systems in this restrictive form. A far more general class of problems can be formulated as systems of differential-algebraic equations — $F(t,y,y')+0$.

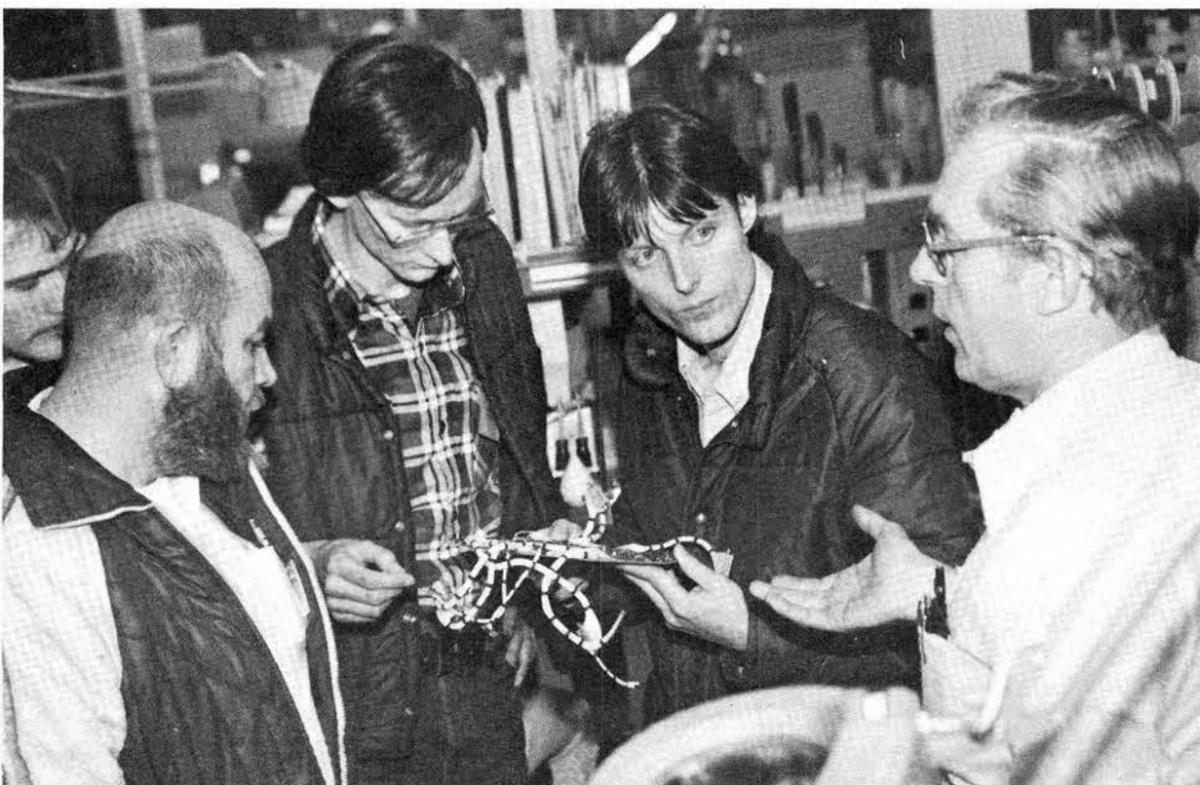
This is where Linda Petzold of Applied Mathematics Division 8331 comes in. She developed a computer code called DASSL ("Differential-Algebraic Solver, Sandia Labs"), which solves nonlinear differential-

algebraic systems. The code has been extensively tested and documented, and its use is similar to that for other codes in the math library for equations in standard form.

"DASSL solves all kinds of problems that are important to Sandia," says Linda. "Problems in flame modeling, ignition processes, chemical vapor deposition processes, solar energy applications, and weapons component design are all written as systems of differential-algebraic equations." Before this code, scientists had to spend their time developing special purpose methods to solve these types of problems. DASSL relieves the user of this burden, and at the same time it provides the reliability and diagnostic capabilities that are expected from a library code.

The mathematical methods used in the code are similar in many respects to those that are used for solving standard differential equations. Therefore, Linda's objective was to extend some of the relatively well-understood solution algorithms for ordinary differential equations to a wider class of problems. "To deal with these problems," says Linda, "we've developed the underlying mathematics, devised new computational algorithms, and designed the Differential-Algebraic Solver code. At Sandia, this code is being used to solve a variety of problems. The code has also met with considerable success outside Sandia on problems arising in space shuttle flight dynamics, magma flow in volcanoes, and electrical network design."

Linda has been working on these problems since 1980. During that time she was assisted by several people, including Bill Gear (University of Illinois), Steve Campbell (North Carolina State University), and Per Lötstedt (Saab-Scania Co., Sweden). The work was funded by DOE's Office of Basic Energy Sciences.



THIRTY engineering students and faculty advisers from the Oregon Institute of Technology IEEE Association visited Sandia Livermore recently, touring the Components and Instrumentation labs and the Electronics Technology area. Explaining the printed wiring board used in a telemetry system is Vern Barr (8466), right. Rex Eastin (8153) and Dan Poole (8212) coordinated the tour.

Technological Aesthetics, Fast Pics, and a Plea to Sandians

In a talk entitled "Art, Technology, Science, and History," Cyril Stanley Smith of MIT explained how the study of metallurgy led him to an examination of the interconnection between all human activities. Smith believes the aesthetic or artistic impulse is the driving force behind progress. "How did people discover what materials to use — from ancient Asian pottery to medieval swords?" he asks. "They were looking for things to enjoy. Agriculture began by someone playing with flowers, animal husbandry began with pets. Art and sensuous pleasure precede technology."

Smith points out that it did not take early man long after he had made beads and strung them to roll them around on a flat surface and realize how to take the load off his back and move it around on wheels. "History," he says, "tends to be verbal and thus distorted. It should be material — you look at a bronze vessel and reconstruct what the society that created it was like — that is art history."

Stained glass windows were the only high art enjoyed by the common people in medieval Europe. To manufacture the lead strips with which the windows were fitted together, the rolling mill had to be invented. Rolling mills were used for 200 years before someone thought of using them for other decorative objects. In many ways, this development marked the beginning of the Industrial Revolution. In fact, the whole electrochemical energy system can be said to stem from an 1842 patent on an improved method of electroplating developed to produce beautiful objects.

Observes Smith: "Necessity is not the mother of invention, it is the mother of technology. Technology grows out of improvements on inventions made in the name of art and beauty."

* * *

In spite of an uncooperative slide projector that seemed intent on proving it could change slides almost as fast as an electronic flash, Harold Edgerton (Emeritus, MIT) took the technical problem in good-humored stride and gave a fascinating illustrated lecture on high-speed strobe photography with a xenon flash lamp.

The three great advantages of the strobe system are its short exposure time, the tremendous peak-light output, and the ability to control the instant of flash. Edgerton has employed the strobe system to reveal some of nature's secrets, for example, showing how a bat in flight catches a meal. High-speed photography reveals that the bat forms a basket with its lower body and scoops up a mealworm in mid-air before eating it — a sequence of events too rapid to be seen with the naked eye.

Another application of the xenon flash lamp is in oceanographic research. The xenon flash lamp effectively uses the energy in a small battery to expose many photographs in underwater cameras. Exposing one frame every 20 seconds, the camera reveals that sand dollars, starfish, and other apparently sedentary denizens of the bottom of Boston Bay actually move about a great deal. Edgerton's underwater

photographic techniques were also used at Loch Ness in Scotland to search for the fabled monster. Even though one photograph revealed what could be taken as a dorsal fin, Edgerton remains unconvinced.

* * *

Admiral John Marshall Lee was a highly decorated combat officer in World War II. Since then he has held high-level positions with the U.S. government, NATO, and participated in the SALT I negotiations. He is currently a member of the Council on Foreign Relations.

Lee is disturbed by the increasing intensity of the arms race. He asked Sandians to oppose nuclear war: "We owe it to ourselves and to humanity to actively oppose nuclear war. There are many ways to participate — do your part and keep on doing it, month after month, year after year."

Lee dismisses the idea of limited nuclear war as "wildly visionary." Under conditions of actual hostilities, limited use of tactical nuclear weapons would be unlikely. Leaders on both sides would be under "unendurable pressure." Each side, he says, would be functioning under the "corroding thought" that the other was about to unleash a general nuclear war. Each side would also have the "shining hope" that a major strike would succeed. "It can't be done," Lee concludes. "Any decision to use nuclear weapons would lead to general nuclear war."

The "quiet, terrible momentum" of the nuclear arms race has both the U.S. and U.S.S.R. in its grip, says Lee. It is the result of a generation of political and military strategy based on nuclear weapons. "We and the Soviets," he says, "have to make fundamental changes in our thoughts and actions — an immense task that won't happen overnight."

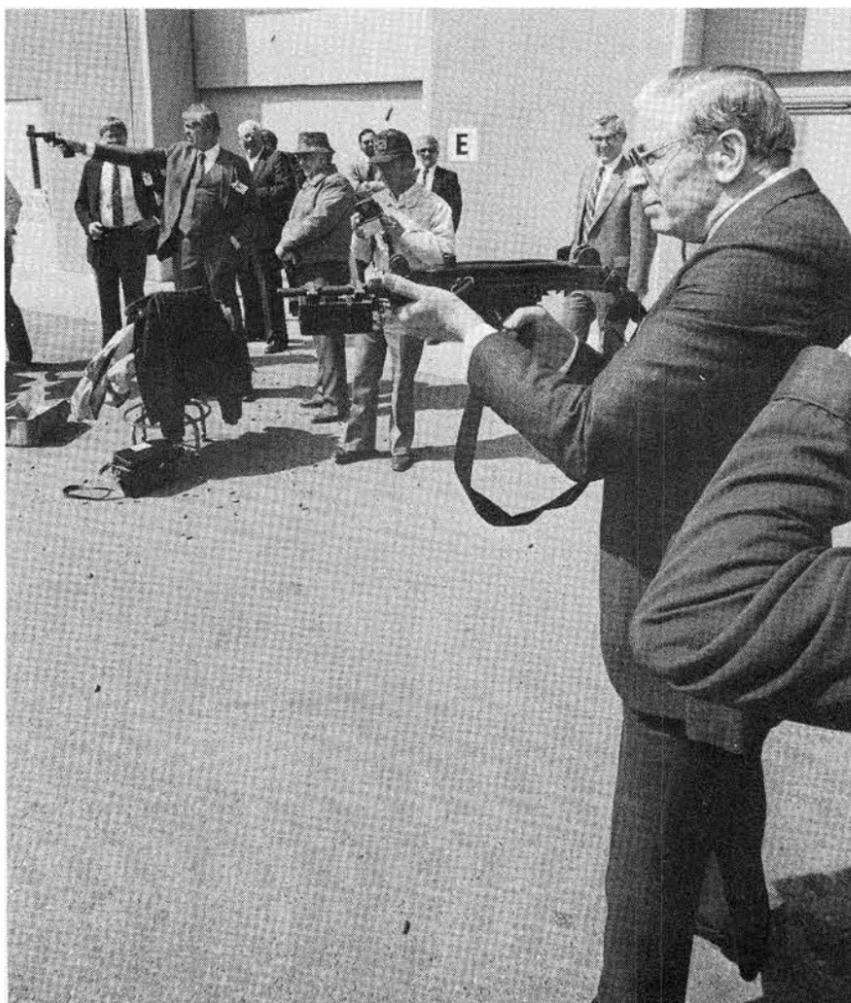
Lee advocates removing nuclear

weapons as a military option and increasing our conventional military strength. It is our perception of Soviet superiority in conventional weaponry that has made us rely on nuclear missiles as our primary defense. He offers three axioms of the nuclear age: (1) more weapons do not produce more strength, (2) better weapons do not overcome the problem, and (3) less security for one side results in less security for the other.

"We can oppose Soviet ideas, actions, and policy but in nuclear weapons we have to cooperate," he says. "The only utility of such weapons is to prevent their use by others. With firm realities like these in mind, we and the Soviets can work together."

"The climate for arms control has improved in the last few months," Lee thinks, "due to the anti-nuclear movement in both the U.S. and Europe. The ideas of some groups in the movement are ragged and confused, some are under Communist control, and others are motivated by anti-Americanism. But these are not the movement's driving forces — it is the realization of the true horrors of nuclear war."

In response to a question from the audience as to when he would give the same speech in the Soviet Union, Lee replied: "Led by Brezhnev's personal surgeon, the Soviet delegation that attended the conference of Physicians for Social Responsibility participated more constructively than many of us had expected. They spouted some boilerplate — after all, Russians are Russians — but they returned to the Soviet Union and put on a two-hour TV program that was shown throughout the country in which they reported on the discussions. Extensive coverage was also given by *Izvestia* and *Pravda*. The message got through — we can't survive this thing!"



THREE KEY CONGRESSMEN were recently briefed on Sandia's defense and energy programs. As part of the Safeguards briefing, they were introduced to special rifles modified to communicate with targets with laser beams. In the foreground, Rep. Tom Bevill of Alabama, chairman of the Energy and Water Development Subcommittee of the House Appropriations Committee (the group responsible for funding most of Sandia's programs), tries his skill with one of the rifles that shoot "laser bullets." The entire Tactical Engagement Simulation System was explained to the visiting subcommittee members, which included Rep. Eldon Rudd of Arizona (visible with pistol in background) and Rep. John Myers of Indiana (not shown).

Take Note

Atmospheric fronts, shock waves, and snowflakes will be among the topics discussed at an international nonlinear studies conference May 2-6 at Los Alamos National Laboratory.

Sponsored by DOE's Applied Mathematical Sciences Program, the conference theme is "Fronts, Interfaces, and Patterns" — physical phenomena that primarily occur from unstable chemical, mechanical, and thermal processes at the moving boundary between interacting materials.

For information, contact The Center for Nonlinear Studies, Los Alamos, 505/667-1444.

* * *

Retiring this month and not shown in LAB NEWS photos are Frank Sayner (2627), Bill Nielsen (2345), Jim Doerner (2335), Kelly Davis (7554), George Bennett (0332), Robert Male (7137), Gertrude Piraino (3733), and Mildred Mellen (7586).

* * *

An exhibit, "Woven Holy People: Navajo Sandpainting Textiles from the Permanent Collection," will be on display through May 31 at the Wheelwright Museum of the American Indian in Santa Fe. Museum hours are from 10 a.m. to 5 p.m. Mondays through Fridays and Sundays from 1 to 5 p.m. To reach the museum in Santa Fe, drive east on Old Santa Fe Trail and turn south on Camino Lejo until you reach the dirt road where the unusual hogan-shaped building is located.

* * *

Business Expo '83 is set May 4-5 at the Albuquerque Convention Center with hours from 11:30 a.m. to 7:30 p.m. Word processors, mini and microcomputers, peripheral equipment, and personal computers will be on display. LAB NEWS (M0125) has advance registration forms (saving a \$2.50 entry fee at door). More information from 262-1712.

* * *

Leo Gomez, radiation biologist with Subseabed Programs Division 9734, will present an invited paper, "High Level Nuclear Waste in the Ocean," at the 7th Annual Mexican-American Engineering Society Symposium May 3-5 in Ventura, Calif. Primary objective of the symposium is to improve the educational, employment, and professional opportunities for Mexican-American engineers and scientists. It includes sponsored attendance of college students from various colleges and universities from across the U.S. Their continued pursuit of scientific careers is encouraged by providing positive professional experience and role models.

* * *

Mary Cleave, a NASA astronaut, will be the featured speaker at the May 6 meeting

Solar Addition

A Clear Clerestory Story

By John Shunny (Ret.)

When a friend suggested a clerestory as a solar addition to my adobe home, I had to confess I wasn't certain just what a clerestory was. Like "hip roof" or "mansard," clerestory was one of those building terms floating at the edge of incomprehensibility.

So let me first clear away the fog with a dictionary definition of clerestory: "Arch. An outside wall of a building, rising above an adjoining roof and having a series of windows which admit daylight to the interior. . ."

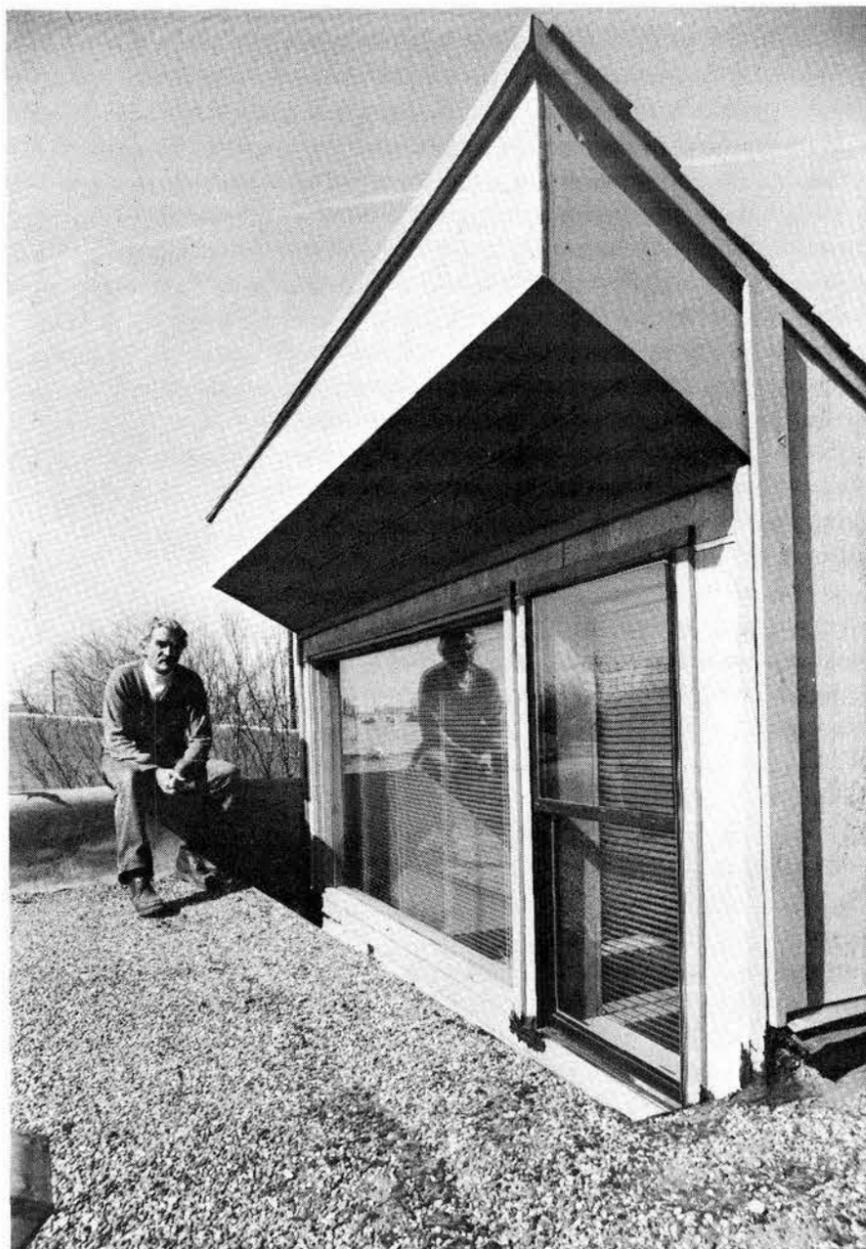
Getting down to cases, — a solar clerestory is generally a wedge-shaped projection from an existing roof, with southward-facing windows in the vertical face of the wedge.

At the time the subject came up, I'd been looking at passive solar possibilities for the house and had concluded that a trombe wall would be a structural and aesthetic basket case. But we had a dining room on the north side that, while pleasant, was always rather dim because its only daylight entered through French doors facing north and shadowed by a portal.

An architect friend interested in solar remodeling checked out the dining room and pronounced it a good candidate for a clerestory. His plan called for two windows, one fixed and measuring 46 x 76 inches, the other a conventional up-and-down slider type 20 inches wide, 46 inches high. (At least one clerestory window should be openable for ventilation purposes.) The larger window is the pane of a sliding glass door installed horizontally — our architect pointed out that these are stock items and are thus much less costly than cut-to-measure glass. Both windows are double glazed to minimize heat losses.

The rationale of a solar clerestory is simple: in winter the sun, low in sky, shines through the windows, lighting and heating

of the American Institute of Aeronautics and Astronautics. She will talk about the space shuttle transportation system and the flight of Challenger. The meeting will be at the Paradise Hills Country Club; cocktails at 6:30, dinner (\$11) at 7:30. The meeting is open to the public. Reservations are required by April 29. Contact Jerry McDowell on 846-0306 or Pat Sanders on 844-0461



RETIREE John Shunny added this clerestory above the dining room of his flat-roofed adobe house for additional light and solar heating. Tax credits made it an attractive proposition.

the room. In summer, the sun, high in the sky, shines little or not-at-all through the windows (depending on the overhang of the clerestory roof). More precisely, in Albuquerque, 36 degrees north latitude, the sun climbs only 30 degrees above the southern horizon on Dec. 21; at the other end of the scale, on June 21, it climbs 78 degrees above the horizon. Between December and June it ranges between the two extremes.

Construction involved cutting through the dining room ceiling and the flat roof. It's not a job for your average do-it-yourselfer, and the two carpenters I engaged took about six days. I did the painting and clean-up work. Total cost was \$1850, including \$1010 for labor and the architect, \$840 for materials. But, and this is a big but, the clerestory qualifies for an energy tax credit, in my case 25 percent from the state and about 4 percent from the feds. Total credit: \$531, bringing the cost down to \$1319.

Does it work? You bet, for both light and heat. On a sunny day our dining room is so dazzling that we installed some mini-blinds to reduce the glare. This is our second winter with the clerestory and, between it and the wood-burning stove now residing in the adobe fireplace, most of the living areas of the house remain warm with only an occasional boost from the furnace.

Construction note: clerestories can be adapted to both flat and pitched roofs. If you'd like a closer look at mine, give me a call — 265-1620.

Sandia Sponsors PATRAM '83 Meet

Approximately 500 persons from at least 20 countries are expected to attend the Seventh International Symposium on Packaging and Transportation of Radioactive Materials (PATRAM '83) May 15-20, in New Orleans.

"PATRAM '83 will provide a forum for an exchange of information and ideas concerning packaging and transportation of radioactive materials by those involved in the field throughout the world," says George Allen, symposium program chairman and supervisor of the Transportation Systems Development and Testing Division 9783. Sandia is organizing the symposium under DOE Albuquerque Operations Office authority.

"The symposium will also provide a means for evaluating the current worldwide status of technology and operational methods for transporting these materials," Allen adds. "It also offers a forecast of the industry's future and a means of defining issues to be expected."

Virtually all facets of transportation technology will be covered during presenta-

tion of more than 200 technical papers. The symposium also will feature film and demonstration sessions and two panel discussions. In conjunction with the symposium, Oak Ridge National Laboratory will host a tour of selected nuclear-related facilities on May 23.

Howard Dugoff, Administrator, Research and Special Programs Administration, U.S. Department of Transportation (DOT), will present the keynote address at 9:20 a.m., May 16. He will discuss future challenges for radioactive packaging and material/transportation.

Allen says, "Major accomplishments of the past symposia include development of international shipping standards and closer cooperation between transportation system developers, shippers, carriers, traffic managers and transportation regulators in order to enhance safety."

PATRAM '83 registration information is available from the Nuclear Materials Transportation Technology Department 9780, 4-3310.

PATRAM '83 Background

— More than two million packages of radioactive materials are shipped in the U.S. each year. These materials range from highly radioactive spent reactor fuel to radiopharmaceuticals having little radioactivity. While radioactive materials constitute less than two percent of the hazardous material packages shipped in the country each year, extreme care is taken in packaging and handling of these items.

— From 1971 to 1981 some 122,800 incidents involving transportation of hazardous materials were reported to the DOT. (Hazardous materials include such items as explosives, flammable compressed air, poisons, and corrosive materials, as well as radioactive materials.) An incident must be reported to the DOT. For radioactive materials, they range

from any suspected contamination in excess of allowable levels during normal transport to severe vehicular accidents.

— Approximately 800 incidents between 1971 and 1981 involved radioactive material, but only nine of these involved any detectable release of radiation and none involved death or resulted in any measurable risk to the public because of radiation release.

— These nine releases principally involved radiopharmaceuticals and yellowcake (a uranium ore concentrate). During the 1971-1981 time frame, DOT received reports of 51 incidents involving Type B packages, the kind that carry spent reactor fuel or high-level waste; however, none of these packages failed or released radioactivity during the incident.



BLOWN out of all proportion? No indeed, it is Sandia's largest inflatable building located just south of Area IV. It is 60 ft. wide by 200 feet long and contains 500,000 cubic feet of storage space. Being totally air-supported, the balloon building has no internal support structure. It's be-

ing used to receive, store, and stage over \$20 million worth of components for PBFA II to be completed in 1986. Looking over the building specs are (l to r) Richard Osborn (KTech), Robert Johnston (1254), and Walter Nickerson (KTech).



How We Die Depends on How We Live

From 1963 to 1981 there has been a 38 percent decline in deaths from heart attacks for ages 45-54. Similar declines have occurred in other age groups.

Why is this decline occurring? The decline started in 1964, the year the Surgeon General warned of the hazards of cigarette smoking. In the same year the American Heart Association recommended diets with reduced levels of cholesterol and saturated fat. Apparently, then, reducing the per capita consumption of tobacco, milk, cream, butter, eggs, and animal fats has led to the declining mortality.

Despite these dramatic developments, problems continue. Heart disease remains America's leading cause of death and is the area of most rapidly escalating healthcare costs. Most of the recent decline in mortality resulted from preventive measures that are virtually risk free and negligible in cost, i.e., smoking cessation, dietary changes, weight control, exercise, and better control of high blood pressure.

All Americans can take pride in their responsible behavior. This decline in deaths from heart attacks — and strokes too — should accelerate as we realize our health, quality of life, and length of life depend to some extent on our lifestyle choices.

Risk factor reduction is indicated for all Americans, not just those demonstrated to be at high risk. Americans at lowest risk have a higher heart attack death rate than entire populations who ingest much lower levels of saturated fat and cholesterol. For example, the Japanese diet contains only 10-15 percent of its calories as fat versus 35-40 percent of calories as fat for Americans. And life expectancy in Japan exceeds that in the U.S. at every age.

Sandia Medical offers a number of programs to enhance positive lifestyle behaviors, including weight control, smoking cessation, blood pressure control, and exercise. For more information on any of these programs, call 4-0713.

Abstracted from the New England Journal of Medicine, Vol. 308, No. 11, pp. 649-651.

Copies are available on request.

Many Happy Returns



Take stock in America.





PICTURED HERE are a couple of scenes from last year's Fitness Day program which serve as reminders that Fitness Day '83 is scheduled Friday, May 13, from noon until 1 p.m. There'll be music, a walk/jog/run for a mile-and-a-half (more of a promenade, not a race), a three-mile bicycle ride, aerobic dance exercises, some calisthenics, and more. Drawings for prizes will be held, re-

freshments and sandwiches will be available (or bring your brown bag), and fun will be had by all including spouses, dependents, and retirees — all cordially invited. The event is sponsored by the Sandia Friends of Health organization. Participants and spectators take a full hour for lunch, A269 time.

Fun & Games

Soccer — The Sandia Summer Coed Soccer League is now organizing for the start of the summer season June 7. Games will be played for eight weeks on Tuesdays and Wednesdays wrapped up with an end-of-season party. Employees of Sandia, DOE, and adult dependents (any skill level) are eligible for membership. Darryl Bouchard (1154) says the emphasis of the league is on fun and instruction. Call him on 4-8634 for more details.

Bowling — The new 20-lane KAFB bowling alley is now organizing summer bowling leagues. Sandia employees are eligible to use the facility, participate in league play. Call Sam White, 4-0165, for info.

Running — The Third Annual "Run to Save the Jemez" is scheduled Sunday, May 15, at 9 a.m. The 10-kilometer race and two-mile fun run follow hard packed dirt roads that wind through farming and village areas of Jemez Pueblo. Entry fee is \$5 in advance for all five categories of runners (by age and sex), \$6 the morning of the race. Following the race, there will be Pueblo dances and an Indian Arts and Crafts Fair. LAB NEWS has entry blanks.

Canoeing — The annual Truth or Consequences Fiesta Canoe Races will be held Sunday, May 1, at the Del Rio Campground below Elephant Butte Dam. Entry fee is \$2.50 for four categories of contestants. For registration forms or more information, write to the T or C Fiesta Office, Box 249, T or C, NM, 87901, or Call George Lackey, 894-6069.

Running/Jogging — The New Mexico Track Club is currently holding its annual membership drive. Walkers, joggers, runners, and anyone else interested in joining or obtaining more information about the Track Club should contact Gil's running Shoe World at 268-6300 or Chuck Atencio (2632) at 4-5976. Individual memberships are \$10 and a family membership costs \$25. The New Mexico Track Club sponsors the annual Fourth of July Midnite Run and the Tour of Albuquerque Marathon.

Walking — The Chicano Student Services at UNM is sponsoring a Walk-A-Thon to benefit the Leo Chavez Fund. The Chavez infant is suffering from a rare genetic defect that is commonly referred to as E.B. (dystrophic epidermolysis bullosa). The disease, which has no known cure, causes the mucous membranes of the digestive tract as well as the victim's outer layer of skin to constantly blister and peel. Leo's parents hope to take him to Germany, where they know of a doctor who has had some success in relieving the pain in other children with the disease. Several Chicano student organizations at UNM are helping to raise money for the trip.

The Walk-A-Thon will be held April 30 at 10 a.m. at UNM (corner of Central and Yale). Individuals can either participate in the walk with a personal contribution or can sponsor one or more of the student walkers. For more information call 277-5020 or check with Max Martinez (1100).

More Running — The American Lung Association of New Mexico is sponsoring a "Clean Air Hill Run" Sunday, May 1, in the foothills of the Sandias. The event is part of New Mexico's participation in "Clean Air Week" being observed May 2-8 by chapters of the Lung Association around the country.

The Hill Run begins at 9 a.m. at the east end of Copper Avenue off Tramway Boulevard with runners given the choice of a five-kilometer or 15-kilometer run. The first 150 runners to register will receive T-shirts, and ribbons will be awarded to top finishers in several age categories.

Registration fee is \$5 for all runners. Money raised will be used by the Lung Association to fund services for asthmatic children and lung disease patients and to accomplish air pollution control in New Mexico. Call 265-0732 or 265-0457 for more information.

Sympathy

To Frank Ezell (7523) on the death of his father-in-law in Clovis, April 21.

To Benjamin Roscoe (9416) on the death of his mother in Baltimore, April 17.

To Dick Jones (2345) on the death of his wife, April 17.



BOB SCHOWERS (7171) sports a new gold medal and T-shirt won in the table tennis event in the recent Fourth Annual Nevada Senior Olympics held in Las Vegas. Participants in the Senior Olympics were 55 or older.

Take Note

If you're planning a weekend communing with nature in any of several state parks this summer, take money. A new day-use fee of \$1 per day per car will be collected (weekends and holidays only) at: Bluewater, Caballo, Elephant Butte, Clayton, Navajo, and Storrie Lakes; the concession area at Bottomless Lakes; Oasis; Rockhound, City of Rocks, and Coronado State Parks. An annual permit sells for \$12 (\$6 for those 62 and older). The new fees will go toward maintenance of parks, control of litter, and persecution (we'd like to believe) of vandals.

If you're an expert in petting (or want to be), head for the city zoo on April 30. Volunteers will be trained to work in the Petting Zoo; you must be 14 or older. More info on 843-7413.

If "Highland High School — Class of '63" matches one item on your resume, or if you know the whereabouts of someone who graduated from there then, call Jim Payne (0323) on 266-3418. This summer is reunion time.

feed **back**

Q. In years past, Sandia Livermore used to have a Christmas dinner dance for employees. Since these events were enjoyed by so many, what could be done to reinstate this annual event?

A. I agree that past Christmas dinner/dances have been enjoyed by many, including myself. However, success of these occasions depended, in large part, on the willingness of a committee of employee volunteers to do the details. This is a big job and, in recent years, it appeared that employees just did not have the time or interest during the busy holiday season to take on the additional responsibility.

I'd be happy to talk with you and any other employees you may know who are interested in reviving the Christmas dinner/dance, provided it is clear that there are enough people to share the planning load and follow through on details. Perhaps we could discuss the possibility for 1983.

A.N. Blackwell — 8200

Q. Those of us who park west of Wyoming feel it's dangerous to cross Wyoming at G and H Streets. The lights for those crossing Wyoming there stay green for a very short time, but the big problem is that the drivers on Wyoming run the red lights. Also, the crosswalk outside of Gate 1 on H Street has been removed, and the busses and cars coming out of that gate do not stop for people who need to cross H Street outside of Gate 1.

A. Traffic on Wyoming Boulevard is out of Sandia jurisdiction. Your complaint about motorists who run the red light is being forwarded to the military police and military traffic safety committee.

The crosswalk outside Gate 1 was placed many years ago to permit pedestrians to cross H, walk to Wyoming, and cross Wyoming on the south side of the intersection, thus avoiding motorists exiting the parking lot in front of Building 800 and motorists turning onto Wyoming. Pedestrians resisted this routing. Therefore, a walk was placed along the north side of the street. Nevertheless, in the interest of safety, we will replace the crosswalk west of Gate 1.

R.W. Hunnicutt - 3600

Q. When I arrive at work, I often find that someone has been parked at my desk in my absence. Who is using my desk? And why?

A. A number of employees from several organizations, working evening and mid-night shifts have no assigned location to take their break or have their lunch. That, of course, does not excuse their making a mess of someone else's work area. If your area is misused in such a manner, a call to the Security Shift Captain on 4-0559 will result in corrective action.

D.S. Tarbox - 3400

Q. We need some lights installed between Bldg. 894 and Gate 10 (where the mardix booth is) for persons working late who have to find their way out of Area I in the dark. There is not ONE light out there.

A. Plant Engineering has activated some lights on existing buildings facing 9th Street and the street light fixtures on M Street have been upgraded with mercury vapor lights, which give more light with less energy. Also, the street lights at Gate 10 have been relamped to provide additional lighting. With these changes, the lighting is now adequate for pedestrians.

R.W. Hunnicutt - 3600

Q. Could Sandia begin a program to assist on-roll employees in planning retirement activities that could be beneficial to the community?

A. I certainly agree that the opportunity exists for a mutually beneficial interaction by Sandians (both current and retired) and community organizations. Many Sandians are spending some of their free time in volunteer services to organizations such as hospitals, schools, neighborhood associations, environmental improvement agencies, and youth and art groups. In addition to caring, Sandians also can bring a wide range of expertise to bear in technical problem solving.

However, in a city the size of Albuquerque, it is often difficult for citizens to identify volunteer opportunities with community organizations in which they have an interest. Community Relations Division 3163 currently is initiating a Volunteers In Action program for employees, spouses, and retirees. The program is designed to assist those Sandians who may want to give their time and talent to help with some worthwhile community activity, but may not be sure of just how to go about it. The program will function as a clearinghouse to link community needs with employees and retirees seeking volunteer opportunities that suit their personal interests and talents. More information on the program from Karen Shane (3163).

H.M. Willis - 3100

Q. There used to be a sidewalk along the north side of Bldg. 836 extending from the northwest entrance to the streetside sidewalk. This was removed when the cooling tower was put in. This area is now filled with rocks. It remains, however, the normal and most-used route from 802 to 836. If you look at the area you can see the path beat into the rocks. The rocks are a safety hazard. I have twisted an ankle twice walking through this area, I know I should walk around, but since this is the natural walking route I don't think of it until I'm already in the rocks.

Is there any reason why the sidewalk, which should never have been removed, cannot be replaced in a timely manner?

A. It is true that the most direct route between Bldgs. 802 and 836 is between the new cooling tower and Bldg. 836. But we would prefer that you didn't use that route so we deliberately removed the sidewalk and installed landscaping including large rocks. Trucks making deliveries or pick-ups at Bldg. 836 use this entrance because of the dock and freight elevator. It is more a safety hazard to compete with the trucks than to walk on the rocks. The preferred route between Bldgs. 802 and 836 is through the west door of Bldg. 836. Unfortunately, this door will be blocked for about a year starting in March while the courtyard of Bldg. 836 is enclosed. Until this building entrance is opened again, I hope that you will remember to walk around the cooling tower.

R.W. Hunnicutt - 3600

Q. While the Library already keeps 3/4-inch U-Matic videotapes of colloquia, it would be great to have them in VHS or Beta format for check-out for home viewing.

A. Thank you for your suggestion to make Sandia Colloquia available for home viewing. Rather than making both Betamax and VHS copies of every colloquium, the library will have copies made as requests are received. Once a copy is made, it will be retained for additional loaning.

H.M. Willis - 3100

Q. Before work this morning, I noticed our company vehicle on the motor pool ready line so I decided to drive it into the area where it belongs. But at Gate 6 the guard opened the gate to allow a van in but closed it to me. I called Security and was told that only emergency vehicles could enter between 7:15 and 8:30. My questions: 1) Is a van full of people too lazy to walk an emergency vehicle? 2) Why is not my company vehicle not allowed to use gate 6, the closest to the motor pool?

A. Gate 6 is closed from 7:30 to 8:15 to most vehicle traffic because both security inspectors there are involved with handling heavy pedestrian traffic and their attention is sometimes diverted from the vehicle gate. There have been four instances recently in which non-Sandia employees, who apparently were unfamiliar with the area and were confused by the heavy vehicle/pedestrian traffic congestion around gate 6, have driven through the gate without stopping. As you can imagine, this created quite a stir for a few minutes until we got things under control. To prevent this we closed the vehicle gates to traffic at gates 1 and 6 and routed the vehicle traffic to gate 10 during this period. We have made exceptions for emergency vehicles, the mail truck, commuter vans, and buses through the gates 1 and 6 during the above time. We implemented the tighter gate control to help us maintain a secure perimeter. Your cooperation is appreciated.

D.S. Tarbox - 3400

Representatives Commend Sandia

During the 1983 legislative session in the state House of Representatives, a memorial was unanimously passed to "honor and commend Sandia." The primary sponsor of the memorial was Rep. Al Otero (3435); one of the several co-sponsors was Rep. Bob Hawk (2422).

The entire memorial is printed below. (It should be noted that it refers only to our Albuquerque location.)

COMMEMORATING THE CONTRIBUTIONS OF THE SANDIA NATIONAL LABORATORIES TO NEW MEXICO

WHEREAS, the permanent facility known as the Sandia national laboratories, located in Albuquerque, New Mexico, has achieved recognition as one of the finest multi-program research laboratories; and

WHEREAS, the existence in New Mexico of the facility has greatly contributed to this state's well-being and progress; and

WHEREAS, the economic impact of Sandia national laboratories upon central New Mexico and the state as a whole has been substantial because of taxes paid by employees, the encouragement of small businesses and supportive services and the employment offered to Albuquerque's citizens; and

WHEREAS, the total number of employees of the laboratories as of January 1983 was 6,753, with a total payroll during fiscal year 1982 of \$208.5 million; and

WHEREAS, the actual outlay figures for fiscal year 1982 are:

- A. total operational budget . . . \$680,000,000;
- B. capital equipment 44,102,000; and
- C. major construction 14,000,000; and



OFFICE FURNITURE built as projects for a carpentry class is displayed by second-year students in Sandia's five-year Structural Apprenticeship Program. The class, instructed by Al Ayotte (3613), established proficiency in use of woodworking power tools. From left are Marla Morgan (3618), Tim Miller (3618), Marcos Martinez (3618), Matthew Puariea (3613), and Diane Wade (3612). The handsome storage cabinets are now dressing up offices in Maintenance organizations.

WHEREAS, the fiscal impact on New Mexico during fiscal year 1982 was \$115,654,984, of which \$114,928,491 was spent in Albuquerque; and

WHEREAS, the Sandia national laboratories have received citations from time to time for their excellent work in specific weapons systems; and

WHEREAS, last fall the employees of the laboratories received an award for being the top contributors to the United Way fund;

NOW THEREFORE, BE IT RESOLVED BY THE HOUSE OF REPRESENTATIVES OF

THE STATE OF NEW MEXICO that it honors and commends the Sandia National Laboratories for their dedicated services to the state and recognizes them for the favorable economic impact that they have had on New Mexico and its citizens; and

BE IT FURTHER RESOLVED that copies of this memorial be transmitted to the director of the Sandia National Laboratories and to the members of the New Mexico congressional delegation.

R E T I R I N G



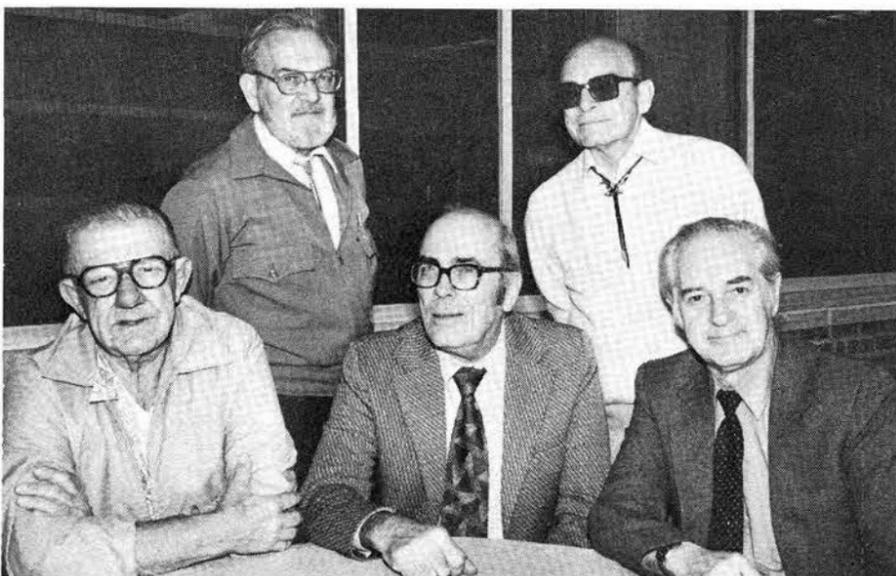
Floyd McFarling (7254)



Leo (7222) and Lucille (2550) Cafferty.



Eunice Wyer (9300), Gene Blake (9210), and John Lindman (7123).



Roy Schultz (3417), Tom Moody (2153), and Ted Gourd (2426), seated. Standing are Larry Horner (2153) and Howard Davis (7543).

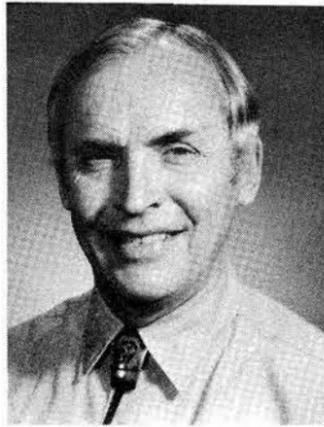


Jack Sublett (7480), Henry Hendrichs (3613), Fred Palkovic (3631), and Wally Granfield (1240).

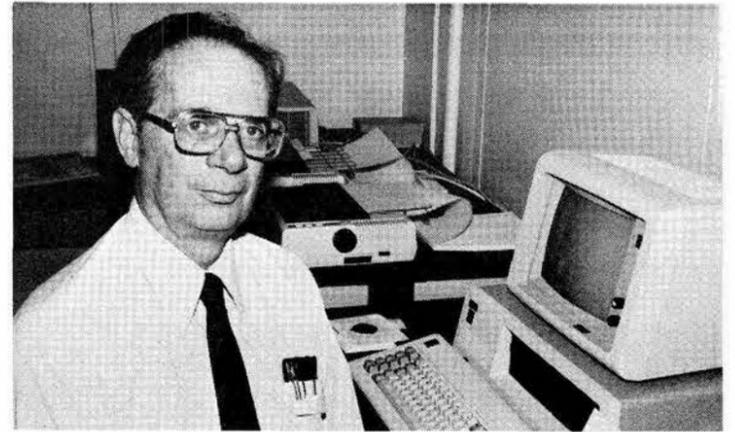
MILEPOSTS

LAB NEWS

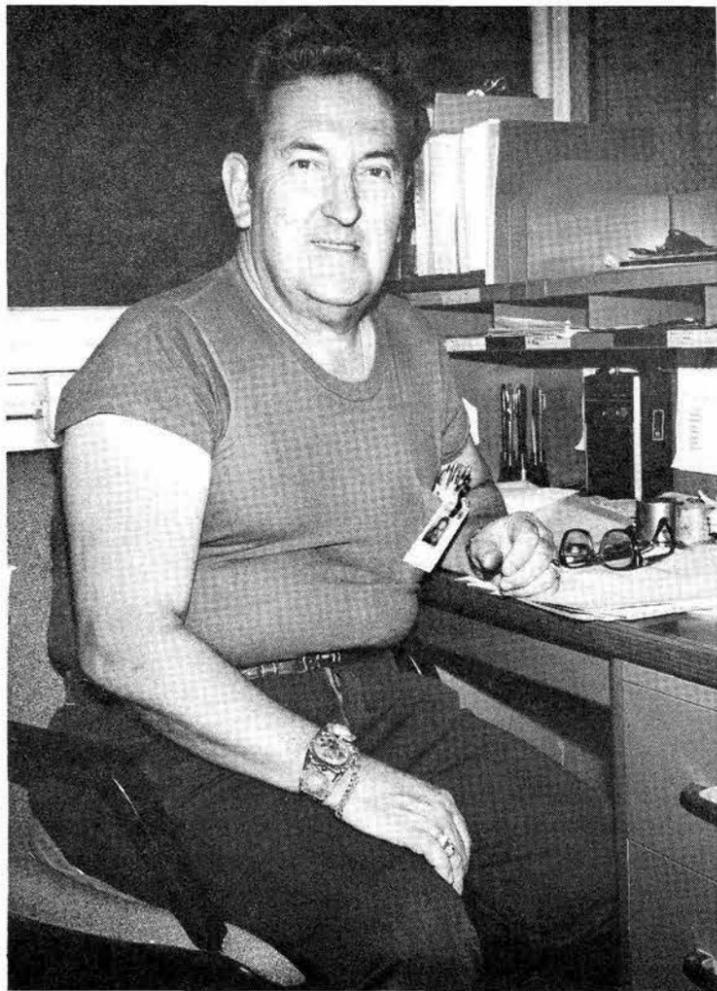
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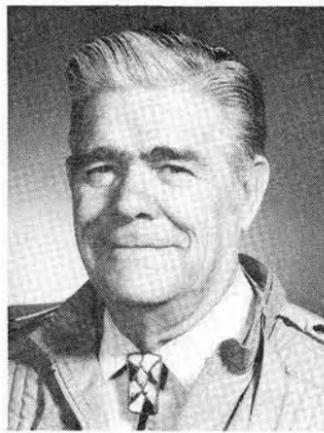
Ken Cole - 1636 25



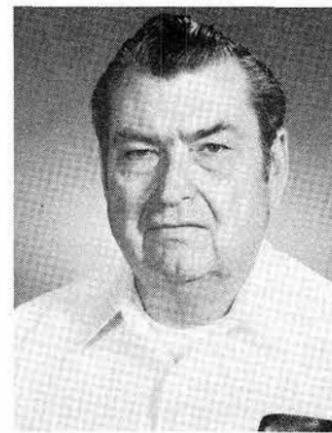
Sidney Gasser - 2624 30



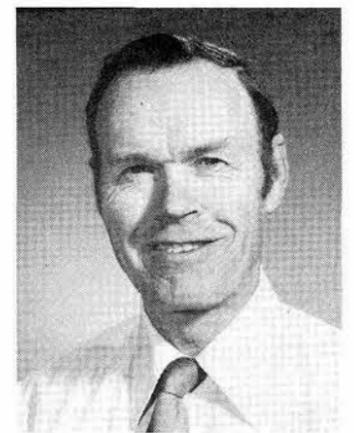
Tony Garcia - 3417 35



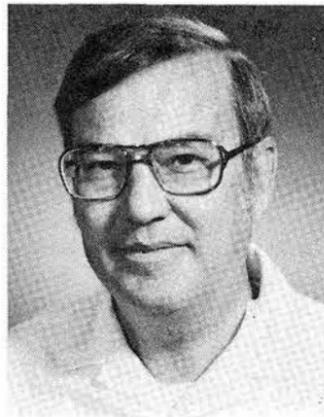
Woody Hunt - 2458 30



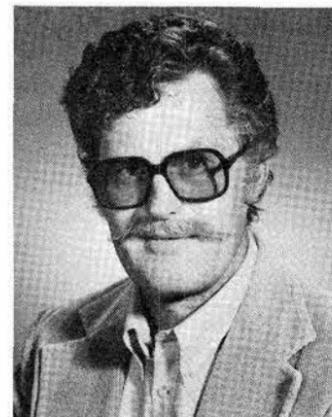
Jack Bahlman - 1653 30



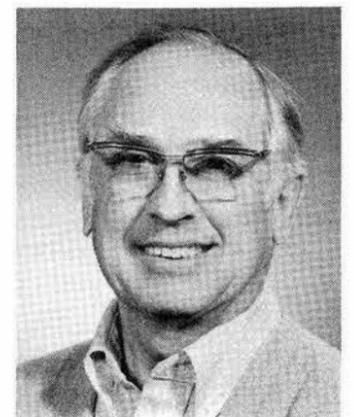
Ken Payne - 9323 25



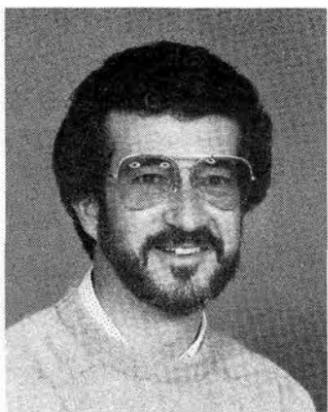
Frank Keene - 7400 30



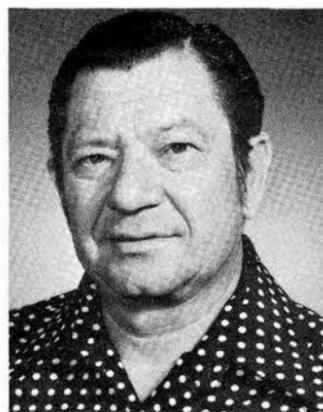
Frank Perry - 1232 15



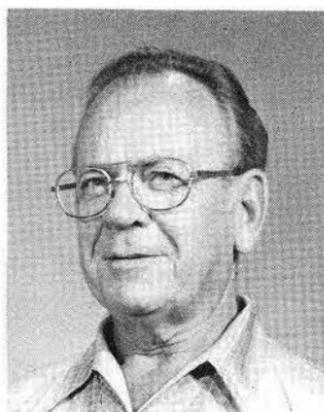
Mel Vick - 7332 35



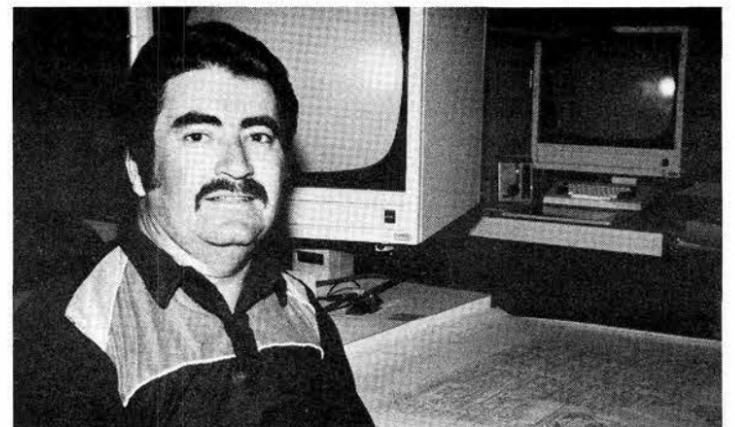
Al Mederios - 8413 20



Ed Wittwer - 7313 30



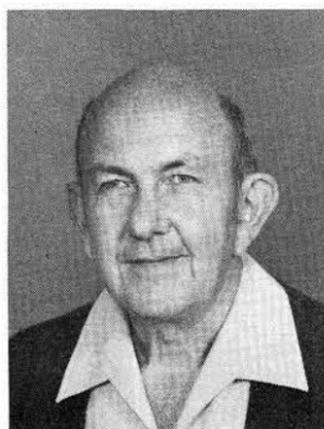
Gene Mead - 9334 30



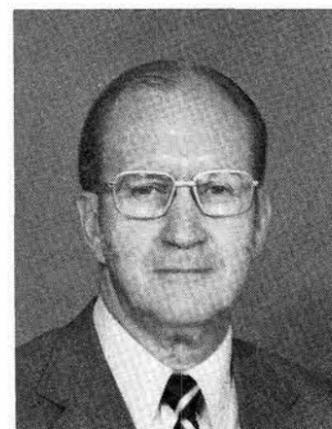
David Sanchez - 2454 20



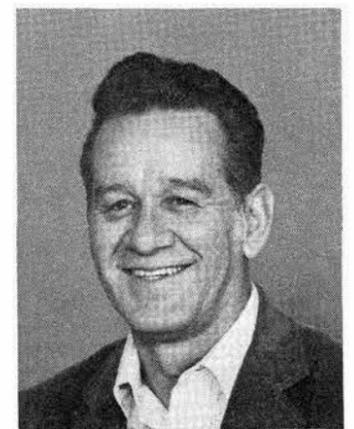
Julian Lovato - 2452 20



Jim Sheley - 8161 30



Ken Bennett - 8261 30



Barry Green - 8463 30

April 29-30, May 1-2 — "Strider," a musical, directed by Jim Morley, U of A, 831-1111.

April 29-30 — The Newmexichords present "Les Girls," a collection of barbershop harmony favorites, 7:30 p.m., First United Methodist Church (4th & Lead).

May 1 — Annual San Felipe Feast Day; huge celebrations (500 dancers), Corn Dance; San Felipe Pueblo, contact pueblo.

May 1 — The Glee Club of Helsinki, 8:15 p.m.; Popejoy.

May 4 — Latin American Feast of Film, "Yanco"; May 18 — "La Muralla Verde," 7 p.m., auditorium, Albuquerque Museum.

Events Calendar

May 4 — "Construction & Design of Acoma Pottery," lecture by Acoma potter Mary Lewis Garcia, 8 p.m., East Gallery, Maxwell Museum of Anthropology, UNM.

May 4-June 26 — "California Suite," Barn Dinner Theater, reservations: 281-3338.

May 7 — Cinco de Mayo Fiesta: Miguel Caro Dancers, Mariachi Nuevo Tapatío, La Compañía de Albuquerque, music food; South Broadway Cultural Center, 1025 Broadway SE (in parking lot), 1-11 p.m.

May 8 — Annual NMSO Mother's Day Concert, picnic on the lawn, 2 p.m., Rio Grande Zoo.

Through May 14 — Craftworks V, juried contemporary crafts exhibition, free, Tues.-Sat. 11 a.m.-4 p.m., Downtown Center for the Arts.

JUNK•GOODIES•TRASH•ANTIQUES•KLUNKERS•CREAM PUFFS•HOUSES•HOVELS•LOST•FOUND•WANTED•& THINGS

CLASSIFIED ADVERTISING

Deadline: Friday noon prior to week of publication unless changed by holiday. Mail to: Div. 3162 (M0125).

RULES

1. Limit 20 words.
2. One ad per issue per category.
3. Submit in writing. No phone-ins.
4. Use home telephone numbers.
5. For active and retired Sandians and DOE employees.
6. No commercial ads, please.
7. No more than two insertions of same ad.
8. Include name and organization.
9. Housing listed here for sale is available for occupancy without regard to race, creed, color, or national origin.

MISCELLANEOUS

- MAPLE kitchen table, 40" diameter, w/3 chairs, \$50. Moyer, 881-3879.
- GE washer & dryer, white, dryer is 220VAC, \$300; GT BMX dirt racing bike, \$175. Chavez, 836-4069.
- OFFICE DESK, 3'x6', wood, 5-draws. including file drwr, \$150 or best offer. Stackpole, 821-5348 after 6:30.
- ROCKWELL International 10" table saw, accessories, \$525 cash; pair touring mirrors, \$20; trailer hitch. Phillips, 3328 Aztec Ct. NE.
- GERMAN-Shepherd-Golden Retriever cross puppies, 6 wks. old, \$20 ea. Chavez, 296-1389.
- NEW couch & chair, bamboo, \$400; 3 matching lamps, \$30 ea.; natural ranch mink stole, \$175; size 9 formal, \$50; size 9 wedding dress, \$50, port. typewriter, \$20. Campbell, 821-2971 or 299-2556.
- PENTAX K-1000 35mm camera, 50mm lens, flash, hot shoe & bayonet mount, \$125. Adkins, 873-2744 after 3.
- QUEEN size bed w/frame, \$100; Tappan dishwasher, lock needs fixing, \$50. Yaniv, 294-4490.
- 5' BAR; double hutch; single hutch; Olympia manual typewriter. Padilla, 296-5048 after 5.
- 1974 FENDER Telecaster guitar, rosewood neck, cream body, \$275 firm. Roff, 255-3944.
- PACKING BOXES: book boxes, 60¢; 3.1 cu. ft., \$1; dish paks, \$1.50; bubble wrap, 10¢/sq. ft. Roeske, 344-5659.
- 15 CU. FT. REFRIGERATOR, Kenmore, copper-tone, \$150; 36" elec. range, dbl. oven, Kenmore, copper-tone, \$150; deluxe charcoal BBQ grille rotisserie, \$20. Lassiter, 255-7991.
- TIRES: four B.F. Goodrich radial mud terrain T/As 31x10.5R-15, almost new, \$400. Moyer, 881-0754.
- ANTIQUE RCA victrola, circa 1921, w/records, needles & orig. instruction booklet, \$375 firm; antique dishes. Martin, 298-7035.
- ANTIQUE COUCH; single bed; breakfast set w/6 chairs; twin bedroom suite; modern sofa; marble top table. Strauss, 299-5501.
- RIVAL chrome food slicer, elec., Model 1101E, 6½" serrated steel blade, safety thumb guard, \$22.50. Rauch, 821-6992.

POOL TABLE, 4'x8', 1" slate, all accessories, \$500. Kelsey, 266-6460.

EXERCYCLE, \$35; 1.74 cu. ft. refrig., \$85, firm. Underhill, 294-5774 after 6.

NEW Conn trumpet; BMX DeCoster racing bike, \$350 invested, sell \$150; 6' pool table, \$150. Arana, 299-1214.

PING PONG table, needs sanding & paint, \$35; furniture; photo darkroom equipment, safe lights, Nikor tanks & reels. Fenimore, 298-8052.

ALTAIR 8800B computer two disks, monitor, 48K memory, CPM, many extras, \$800; beehive terminal, needs work, \$90. Hubbard, 842-9431.

BOY'S 21" bicycle, \$25; Sani-mate porta-potti, \$35; motorcycle windshield, \$25; wingtips for Quicksilver fairing, \$10. Schuler, 298-5827.

CORVETTE parts, 78-82 louvers, 63-67 hoods; 63, 64 trailing arms & axle shafts; photo equipment, 4"x5" camera complete, 4"x5" B/W darkroom. Williams, 293-3630.

QUEEN SIZE waterbed, new, divided headboard w/shelf, heater, padded rails, \$250 or best offer. Speller, 242-8532.

TYPEWRITER, Smith-Corona Coronet Super 12, cartridge ribbon, electric, w/case, \$125 or best offer. Drury, 293-1929.

GARAGE SALE: April 29 and 30, 9-5, 1409 Elizabeth NE, east of Eubank, four family, many items. Graham.

GARAGE SALE for 18 player youth soccer team, many items including furniture, clothing, 11609 Bellamah, April 30, 8-4 p.m. Atkins, 298-5762.

BATHROOM FIXTURES, blue set w/tub, white without, make offer; kitchen sink, \$10; lg. dog house, \$25. Roberts, 881-2815.

RACK for carrying bicycle on car rear, \$10. Hughes, 299-6674.

WALL MOUNTED exercise system for the whole family, hardly used, \$200 or best offer. Sifford, 869-3982.

TV test equipment & misc. electronic components. Buksa, 898-1282 after 5.

RADAR detector, Whistler Z-70; punch bowl & matching cups; antique adding machine. Tripp, 822-8580 after 5.

2 DOGS: Australian Shepherd, Llasa Apso w/papers, both 2 yrs. old, must sell together; complete wet suit, size 9 women's. Downs, 255-6524.

BOY'S bicycle, 20" Schwinn, reflectors, std. handlebars, kickstand, \$20; window, 36x36" aluminum frame, two fixed panes, \$5. Beard, 821-0309.

MOTORCYCLE mufflers, set of 4 for early Honda 750, new, \$200/set. Sons, 294-3953.

CRIB w/waterbed mattress, walnut veneer, \$100. Philbin, 292-1352.

WALKER (ambulatory device), adjustable height, folding, extra front wheels, Safe-T-Walker brand, \$40. Magnuson, 268-5955.

GAS DRYER, \$15; hamster cage, \$6; assorted luggage, \$5; hot plate, \$3; roll wire mesh, assorted lengths, \$5. Drayer, 821-4017.

TYPEWRITER STAND w/drawer, Sears best, new, \$60. Caskey, 294-3218.

PANASONIC SE3170 compact stereo, includes turntable, 8-track tape deck, SB2000 thruster speakers, \$200 or consider best offer. Lane, 884-4566.

WOMEN'S bicycle, 24", 3-spd., side baskets, \$35; sofa bed, twin, \$250. Medernach, 299-9322.

COBRA mini size cordless telephone, Model CP110S, paid \$219.95, sell for \$150. Hamblett, 298-6052, afternoons.

TORO 21" lawn mower, self propelled, side bagger, \$290; Wards reel-type hand mower, recently sharpened, w/catcher, \$50. McBride, 299-4347.

POOL TABLE, full size, 8 cues, all accessories, cue rack, cover & overhead table light, \$400. Earley, 296-7383.

PHONO cartridge, Shure V15-III w/biradial & hyperelliptical styluses; have photos of styluses, \$50 or best offer. Ritchey, 268-7620.

WHEELS, spoke for Jeep Cherokee, 10-15 tires mounted, 4 ea., \$100. Puariea, 299-6377.

ELEC. lawnmower, rotary, Wards, \$50; exercise cycle, \$35; drum end tables, \$25. Whitham, 266-9313.

LAWN TRACTOR, 11 hp, 36", used 2 seasons, \$600 firm. Himes, 869-6559.

MINOX 35 EL camera, smallest full-frame automatic 35 mm camera, fits in leather cigaret case (included), \$100. Laval, 898-9112.

TRANSPORTATION

'78 FIAT, 51K miles, 2-dr., removable top, mag wheels, radials, AM/FM radio, cass., striping kit, \$3500, will negotiate. Gallegos, 881-1363.

'69 VW bug w/rebuilt engine, 40K miles, \$1900. Altwies, 292-3884 after 5.

'75 MERCURY Marquis Brougham, PS, PB, PW, cruise control, stereo AM/FM radio, 8-TK, needs body work, \$1000 or best offer. Pimentel, 884-1669 or 268-0261 after 7.

'76 AUDI Fox, AT, AC, \$2350; Bicycles: Fuji Royale 12 sp. lightweight, 25 frame, \$195; boy's Nishiki 10 sp., 24" wheels, \$65; Rollfast, 3-spd., \$35. Neal, 294-3088.

'80 VW Rabbit, yellow 4-dr., heater, AC, radio-stereo AM-FM, tape player, manual trans., \$4000. Ford, 299-3331.

'67 FORD F100 pickup, AC, AT. Padilla, 298-0903 after 5.

'80 PONTIAC Sunbird, air, power, 4-spd., cassette, new radials, \$3500. Curtis, 821-3522.

'76 TRANS AM, 400, V8, AT, PS, PB, tilt, new paint. Gorman, 255-4431.

BICYCLES: men's 3-spd. 26", \$10; girl's 20", \$20. Bertram, 294-8350 after 7.

BICYCLE, almost new Panasonic Sport 10-spd., plus accessories, \$95. Dancy, 299-8223.

'82 HONDA Prelude, AC, Clarion AM/FM/Cass., 7900 miles, 2-dr., sun roof, 5-spd., red ext./int. \$8K. Mundt, 293-5290 after 5.

360 cc Husquarna dirt bike, licensed for street, \$650. Kelsey, 266-6460.

SCHWINN BICYCLE, boy's 20", \$50. Hickox, 299-0772.

BIKES: 2 20", girl's, \$25; boy's \$20. Byers, 298-8326.

'81 SUZUKI GS-650E, w/fairing, \$1900. Prevender, 299-5253.

'65 RAMBLER Classic, 166K miles, AT, AC, CB, 8-TK; new battery, water pump, tires; body damage, some engine work. Banwart, 292-5436.

'73 FORD ECON-300 van w/302

engine, 1-ton, equipped for camping, \$1000. Jacobs, 292-3164 or 292-6174 after 5.

'78 YAMAHA 125cc Enduro, 7K miles, adult ridden, \$495. Hymmer, 293-6029.

BICYCLE, AMF, 10-spd., 27" wheels, \$55. Delnick, 298-5276.

'73 MOD. 1210 Travelall, 90K miles, PS, PB, AC, AT, needs trans. work, tune-up, battery, as is \$900. Madlener, 256-1071.

'73 VEGA, needs engine, body fair, yours for taking. Davis, 281-1248.

'81 VW Dasher diesel wagon, AC, sun roof, AM/FM stereo cassette, \$6400. Marder, 883-3863.

12' ALUM. fishing boat, Loweline, bow eye, stern handles, running lights, drain plug, \$200. Hughes, 299-6674.

'77 HARLEY DAVIDSON, limited production XLCR 1000, \$3400. Ashcraft, 294-1051.

'74 260Z, low mileage, AM-FM, louver, 25-30 mpg, radials, pollution-free permit. Bell, 345-9440.

'75 CORVETTE convert., low mileage, 2 tops, 4-spd.; left handed D-41 Martin guitar w/hard case; Western Wood competition Mach 3 slalom water ski. Perryman, 281-3020.

'80 SUNBIRD, 4-cyl., AT, AC, PS, AM-FM-cass, sun roof, tilt steering wheel, 18K miles, \$4400. Harris, 821-3001 after 5.

YAMAHA 400 Enduro, street ready, windshield, \$600. Hansche, 281-5623.

'73 BUICK Le Sabre, 84K miles, fully equipped, steel radials, tilt SW, tune-up, passed emission test, \$1000. Beard, 821-0309.

'79 HARLEY DAVIDSON Sportster, 7K miles, 6" extended forks, mag wheels, blue. Johnson, 888-4114.

'73 BUICK Centurion convert., new paint & trans., \$2900. Smith, 298-8227.

15' FIBERGLASS boat, 60 HP Evinrude motor, Dilly tilt trailer, \$2200. Dahlgren, 298-8168.

'74 DODGE pickup, PS, AT, LWB, 318, camper shell, low mileage. Lloyd, 299-5614.

'71 TOYOTA Corona, AT, AC, low mileage on engine, transmission & brake overhaul, \$1400. Pederson, 294-8566 after 5.

'76 COUGAR XR7, special edition, power windows/sunroof, 400 cu. in. engine, 42,000 mi., body needs work, \$900/best offer. Chavez, 296-1389.

'72 TRIUMPH 650 Bonneville motorcycle, completely rebuilt & customized, \$2000. Gonzales, 344-4933.

'81 PONTIAC LeMans, 4-dr., beige, V6, AC, PS, PB, 41K miles, \$5300. McBride, 299-4347.

'71 PONTIAC wagon, AC, PS, PB, AT V8 new tires & exhaust, \$1475. Sciacca, 293-0633.

'75 ENDURO bike, Bultaco Frontiera 360cc, low miles, includes speedometer & lights, \$495. Earley, 296-7383.

10-SPD. bicycle, men's light weight, \$125. Syler, 299-2941.

'80 KAWASAKI 1000 Classic, 1500 miles, fuel injection, sell or trade. Herrera, 836-1768.

REAL ESTATE

3-BDR. HOUSE, 1½ bath, den, carpet, (2 yrs. old, neutral tones), new flooring in kitchen & baths, SW area, low \$50s. Archuleta, 831-4515.

½ ACRE, Los Lunas, view, custom home area, solar site, terms or trade for home equity. Cook, 869-6921.

10 ACRES off South 217, power & water nearby, price varies w/terms. Hands, 836-5919.

SW style in Academy Hills, great room concept, beamed ceilings, kiva fp, 3-bdr., 2 bath, formal DR, kitchen w/dining area, assumable loan, \$190K, 9717 Admiral Emerson NE. Shipe, 821-6581.

10 ACRES South 14, trees, hiway frontage, proven water, \$48K. Kelsey, 266-6460.

5½ ACRES in Jemez Mtns., electricity, pure spring water, natural gas, Nat'l. Forest surrounding, Ponderosa pine & meadow, \$48,500. Hughes, 299-6674.

9 ACRES w/telephone & electricity near Estancia, \$15K at 10% interest & 10% down payment. Thomas, 256-1921.

ACRE w/stream, 6 miles east of Tramway, good access, power, phone, soil studies, \$25,900. Turpin, 281-3675.

MOBILE HOME, 14x70, near Edgewood, must be moved, \$9K total: \$5K down, take over \$151 per month. Hansche, 281-5623.

3 ACRES, North El Cerro Loop, good stand of alfalfa, \$11K/acre. Kadlec, 265-2915.

WANTED

BOWLERS, men & women, leagues forming for brand new Brunswick (synthetic finish) lanes at KAFB, auto. scoring, Mon./Thur., 6:30 p.m. Chavez, 836-4069.

TRANSVAN or mini motor home to rent, early July for 2 weeks. Payne, 299-5966.

BUY or copy instruction booklet for hi-fi stereo review test record model 211, Electrovoice SP12 speaker. Scheiber, 298-0904.

VISITING Professor would like to house-sit or rent furnished house June 15-July 15 (dates flexible). Gerardo, 298-4219.

FORD C-4 automatic transmission. Gorman, 255-4431.

LARGE chest-of-drawers, reasonable condition & price. Gottlieb, 298-9859.

FORD truck wheels; table or radial saw. Nogle, 299-3863.

TANDEM bicycle. Neal, 294-3088.

HOUSE to rent by July 1, 1-2 bdr., must have garage. Hoffman, 292-1589.

EXERCYCLE; TI Speak and Spell; Yamaha CP30 or CP35. Wehrle, 255-4667.

COUPLE needs house to rent, May 15, 2-bdr., fenced unfurnished, University area or near NE. Mowery, 268-2803.

OLD or unusual cartridges; old books on guns & cartridges. Edgerly, 898-2983.

USED exercycle. Prevender, 299-5253.

PATIO TABLE w/4-6 chairs. Byers, 298-8326.

WORK WANTED

HOUSECLEANING. Mirna Cone, 265-2705.

LIGHT hauling jobs, rototilling, lawn mowing, misc. yard jobs. Scott Widenhoefer, 298-2510.

SHARE-A-RIDE

VAN POOL: monthly or daily passenger pickup route from Corrales via North Coors to I-40. Joe Seiglitz, 898-5939 or Tom Starr, 897-4414.

Mother's Day Brunch May 8

TONIGHT at Happy Hour, it's a New Orleans-style shrimp peel and a Dixieland band. Elmer Kane, the man with the band playing the local big hotels lately, brings a Dixieland group to the Club tonight. For the youngsters who don't remember Dixieland, Dixieland's spirit, improvisation and swinging beat are the heart of jazz. Elmer comes highly recommended. So does the shrimp. One pound to peel is the portion with seafood chowder, hush puppies, and cole slaw on the side for \$7.25 (adults) and \$4 (kids 12 and under).

VARIETY NIGHT next Saturday, May 7, brings a Walt Disney comedy, "The Apple Dumpling Gang," to a family audience. Super sandwiches are available at 5 p.m., the movie starts at 6. Admission is 50 cents per person.

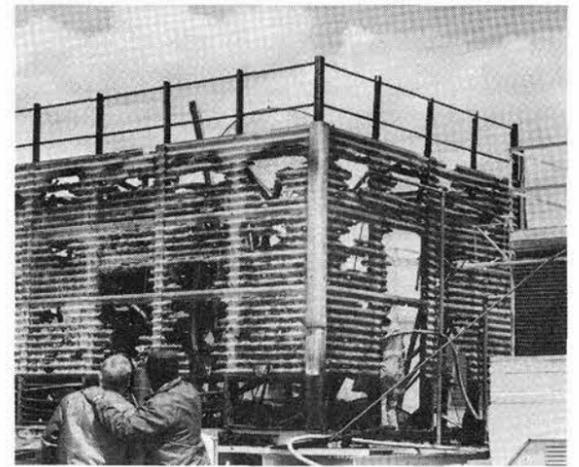
GAMES NIGHT every Thursday continues to generate enthusiasm and happy participants. Super sandwiches are available at 5:30 p.m., the early bird game starts at 6:45. Check the poster in the Club lobby for details.

ON FRIDAY, May 6, the Apple Mountain Band returns to bandstand to play a variety of country and western tunes. Dinner is a spread of broiled steak and prawns for \$9. Happy Hour starts right after work on Fridays with special prices in effect until 7:30 when the music starts. The dinner is served from 6 until 8:30.

MOTHER'S DAY, Sunday, May 8, is special at the Coronado Club. It honors all wives of members who are mothers and all mothers who are Club members with a free brunch. The brunch is a memorable spread



FIRE ATOP BLDG. 806 livened up the lunch period on April 13. A wooden cooling tower slated for removal was removed in an unorthodox fashion after a welder's torch ignited the structure. While it was a total loss (small photo), there were no injuries and no damage to the building itself. Sandia Security and the Base Fire Department responded quickly to the emergency. An investigation into steps that could have been taken to prevent the incident is underway.



of good things to eat including baked halibut, baked salmon, fried chicken, baked ham with cherry sauce, beef eye of round with mushroom gravy, fruit compote and assorted desserts. It will be served from 11 a.m. to 3 p.m. Adults pay \$8.50, children 12 and under, \$5.50. Call 265-6791 for reservations.

THE SPRING BALL is set for Saturday, May 14, with the Billy Morris orchestra

booked for the event. The group plays orchestrations from the big band swing era. Dinner is your choice of Coquilles St. Jacques Mornay or prime rib at \$9. Plan to dress up a little and make the scene. Reservations, please.

THE CORONADO SWIM TEAM is now organized and working out. Interested parents who wish to enroll their children in a competitive swim program are urged to call Tom Lenz, 4-8486.

TRAVEL — Club sponsored travel packages coming up include Chaco Canyon May 14 for \$24, Puerto Vallarta May 19-26 for \$384, and Las Vegas by bus May 29-June 1 for \$122 or by air May 29-31 for \$146. See Shirley McKenzie in the lobby tonight between 5 and 6 and pick up a travel brochure on the China trip in mid-September.

UPCOMING EVENT — Grand opening party for swim season May 30.

Congratulations

Karen (2551) and Lewis Marlman, a daughter, Meghan, March 27.



ONE WAY TO GET HORSE SENSE INTO GOVT.

Marianne Gorman asks whether we are about to follow the precedent set by the Emperor Caligula, who gave a political appointment to his horse. I would thoroughly applaud the Emperor's example. It seems to be the only way to get a stable government.

Letter to Irish Times, Dublin, quoted in World Press Review



"Oh darn, the elevator's stuck again. That means we have to climb a whole flight of stairs."